

The background papers on the candidate national program priorities are intended to initiate further discussion. When priorities are selected more detailed strategies with in-depth background information, numerical targets, schedules, milestones and performance measures will be developed.

Proposed Priority

Safe Drinking Water Act (SDWA) - Microbial Plus

Universe & Types of Facilities

This potential priority includes public water systems (PWSs), defined at 40 C.F.R. §141.2 III. While public water systems are identified under SIC code 4941 North American Industry Classification System (NAICS 221310), they may also be located at facilities identified under other SIC codes if the facility produces drinking water onsite. EPA's Safe Drinking Water Information System/Federal version (SDWIS/FED) database currently maintains an inventory of approximately 168,000 active PWSs, more than 90 percent of which serve 3,300 or fewer users. The various drinking water regulations define systems serving 3,300 or fewer users as small systems. There are nearly 1,000 PWSs on Indian lands, most serving fewer than 3,300 people and none serving more than 10,000.

Geographic Range

Nationwide.

Environmental Risks

Bacteria, protozoans and viruses are all microbial pathogens of concern. Microbial contamination can be present in source water (surface water, ground water, or purchased finished water), can be introduced by unsanitary conditions at treatment or storage facilities, and can enter the drinking water delivery infrastructure through infiltration or cross-connections. Generally speaking, the risk of microbial contamination is highest during warm months at systems that use surface water as a source. Because nitrates are a primary component of chemical fertilizers and are also concentrated in animal and human wastes, nitrate contamination of drinking water is most likely to occur in agricultural areas, or as a result of improper biosolids application near a public water system's water source.

1. Acute Contaminants – Microbial pathogens or nitrates in drinking water can produce immediate severe health effects, especially in children, the elderly, and persons with compromised immune systems. Adverse health effects of microbiological contaminants can include, fever, jaundice, pneumonia, vomiting, diarrhea, dehydration, and death. Nitrate taken into the body is converted to nitrite, which obstructs the blood's ability to carry oxygen. This can produce serious illness, particularly in infants, characterized by shortness of breath, bluish skin and, in extreme cases, death by suffocation.

2. Substantial Endangerment – Many contaminants, microbial, chemical, or radiological, regulated

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or unregulated, may constitute an imminent and substantial endangerment to public health if present at significant levels in drinking water.

3. Cumulative Risks – Public water systems in non-compliance with multiple non-microbial rules (e.g., a radionuclide Maximum Contaminant Level (MCL) and a barium MCL) or that have combinations of multiple types of violations (e.g., violations of a MCL or treatment technique plus a monitoring/reporting violation) may pose a higher cumulative risk to public health. Additionally, systems located within the same geographic area may experience similar violations thus posing another type of cumulative risk for users who get their water from more than one system (e.g., people whose drinking water at work and home are supplied by different systems).

Noncompliance Information

The Total Coliform Rule, which applies to all public water systems, historically is the drinking water rule most frequently violated. Almost 44,000 of the more than 110,000 drinking water violations reported in EPA's 2001 National Public Water Systems Compliance Report were violations of the Total Coliform Rule. Another 5,000 of the drinking water violations were violations of the Surface Water Treatment Rule. This means that more than 56 percent of all drinking water violations in calendar year 2001 were violations of microbial rules. In the same year, there were more than 9,100 violations of nitrate requirements. In FY 2005, by focusing on violations of the Total Coliform Rule, the Surface Water Treatment Rule, the nitrates requirements, and the newly-effective requirements of microbial rules such as the Interim Enhanced Surface Water Treatment Rule, the Filter Backwash Rule, the Long Term 1 Enhanced Surface Water Treatment Rule, and the Stage 1 Disinfectants and Disinfection Byproducts Rule, EPA would likely be addressing approximately two-thirds of all drinking water violations.

Of the 41,300 PWSs for which the states reported a violation of a health based standard or significant monitoring and reporting requirement, almost 39,400 were small systems serving 3,300 or fewer users.